

System Administrator's Guide

**Monarch®
Pathfinder® Ultra®
Platinum Printer**



This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commissions Rules and Regulation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. However, there is no guarantee that interference will not occur in a particular installation.

If the equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Re-orient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that which the receiver is connected.

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

Trademarks

Monarch®, Pathfinder®, Ultra®, Pathfinder® Ultra®, 6039, 9462, and 9465 are trademarks of Paxar Americas, Inc.

Paxar® is a trademark of Paxar Corporation.

Avery Dennison® is a trademark of Avery Dennison Corporation.

Microsoft® and Windows® are trademarks of Microsoft Corporation.

Symbol® and Spectrum24® are trademarks of Symbol Technologies.

Motorola® is a trademark of Motorola, Inc.

Avery Dennison Printer Systems Division
170 Monarch Lane
Miamisburg, OH 45342

LITHIUM - ION RECHARGEABLE BATTERY.
FOR PROPER RECYCLING OR DISPOSAL, CALL
YOUR LOCAL SERVICE OFFICE.



Li-Ion

Outside the U.S., send batteries to:
Paxar EMEA, 4 Awberry Court
Croxley Business Park, Hatters Lane,
Watford, WD18 8PD

TABLE OF CONTENTS

INTRODUCTION	1-1
Using This Manual	1-1
Audience.....	1-1
ADMINISTRATIVE TOOLS	2-1
Using the Taskbar Lockdown Option	2-1
Locking the Taskbar.....	2-1
Removing Applications	2-2
Removing Applications	2-3
Unlocking the Taskbar.....	2-3
Using Asset Tracking.....	2-3
Editing Owner Data.....	2-3
Printing an Asset Tracking Label.....	2-4
Printing an Asset Tracking Label.....	2-5
Using Printer Passthru.....	2-5
CONFIGURING WIRELESS SETTINGS	3-1
About the 802.11b Wireless Card.....	3-1
Using the Mobile Companion.....	3-1
Finding a Network.....	3-2
Creating a Profile	3-3
Setting a Password.....	3-4
About the 802.11b/g Wireless Card.....	3-5
Using Fusion	3-5
Finding a Network.....	3-6
Creating a Profile	3-7
Setting a Password.....	3-9

USING PRINTER DIAGNOSTICS	4-1
Accessing Printer Diagnostics	4-1
Testing the Print Engine	4-1
Checking Machine Totals.....	4-2
Printing Diagnostic Labels	4-3
Checking the Stock Registration.....	4-5
Testing the Sensors	4-7
Testing the Printhead	4-9
Viewing the Print Engine Memory Expansion Directory	4-10
Testing the Keypad	4-11
Testing the Speaker	4-11
CONFIGURING THE SCANNER	5-1
Setting Scanner Options	5-1
Enabling Specific Bar Codes	5-5
Configuring UPC/EAN Bar Codes	5-5
Configuring UPC/EAN Bar Codes	5-6
Configuring Code 39 Bar Codes	5-9
Configuring Code 128 Bar Codes.....	5-11
Configuring I 2of5 Bar Codes	5-12
Configuring MSI Bar Codes.....	5-13
Configuring MSI Bar Codes.....	5-13
Configuring Codabar Bar Codes	5-14
Configuring Code 93 Bar Codes	5-15
Configuring D 2of5 Bar Codes.....	5-16
Configuring RSS Bar Codes	5-17
Printable Bar Codes vs. Scannable Bar Codes	5-18
USING SCANNER DIAGNOSTICS	6-1
Performing Scanner Diagnostics	6-1
Setting the Scanner Mode.....	6-3
Setting the Trigger Mode	6-3
SCAN STATUS VALUES	A-1

INTRODUCTION

1

The Monarch® Pathfinder® Ultra® *Platinum* 6039™ printer prints, scans bar codes, collects data, and communicates with other devices. The printer operates on a modified Microsoft® Windows® CE platform.

Information in this document supercedes information in previous versions. Check our Web site (www.monarch.com) for the latest documentation and release information.

Note: Before you begin, review the safety information in the *Regulatory Compliance* document included with your printer.

Using This Manual

Following is a summary of the contents of this manual.

	Chapter	Contents
1	Introduction	Information you should know before using the printer.
2	Administrative Tools	Using the taskbar lockdown, asset tracking, and printer passthru options.
3	Wireless Configuration	Setting communications between your wireless printer and network.
4	Printer Diagnostics	Using printer diagnostics to print test labels, check sensors, view inches printed, etc.
5	Scanner Configuration	Configuring the scanner to accept certain bar codes and setting the scanner and trigger modes.
6	Scanner Diagnostics	Using scanner diagnostics.

Audience

This manual is for the System Administrator who configures the printer and scanner and performs diagnostics.

A *Quick Reference* for this printer is available in the box.

The *Programmer's Manual* and other documentation are available on our Web site.

Use these tools to

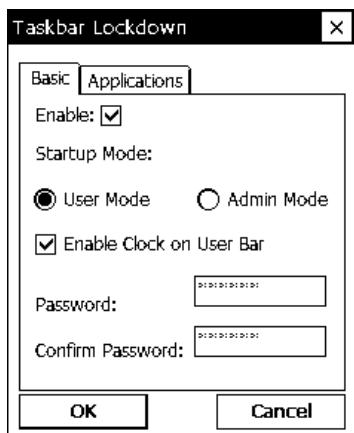
- ◆ lock the taskbar to restrict user access
- ◆ identify and track your printers
- ◆ send MPCLII packets directly to the printer.

Using the Taskbar Lockdown Option

The Taskbar Lockdown option prevents access to the Start Menu or any unspecified applications without a password. The system administrator selects which applications are accessible when the taskbar is locked.

Locking the Taskbar

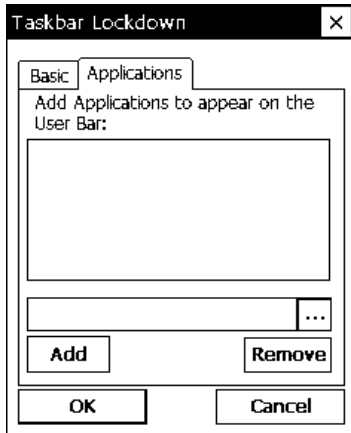
1. From the **Start Menu**, tap **Settings, Control Panel, Taskbar Lockdown**.
2. Check **Enable** under the **Basic** tab.



3. Select the **Startup Mode** for the user or administrator. To disable the clock display on the taskbar, uncheck the **Enable Clock on User Bar**.
4. Enter and confirm a password. The default password is 123321.

Note: Make a note of the password if you change it. You must have the current password to unlock the taskbar.

5. Tap the **Applications** tab.



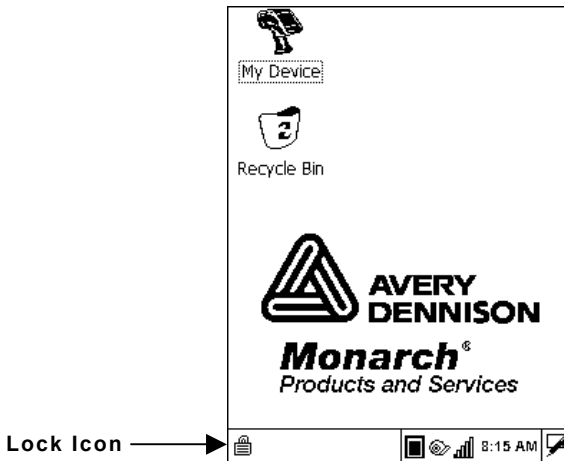
6. Tap the browse button (...) and select an application that the user has permission to run.

7. Tap **OK**. The selected application path appears in the browse field.

8. Tap **Add**. The application appears in the list.

9. When you are finished, tap **OK**, then **Yes**. The printer restarts.

A small lock icon appears over the Start Menu when the taskbar is locked.



Removing Applications

If an application is removed from the list, the user no longer has access to that application when the taskbar is locked.

1. From the Taskbar Lockdown screen, tap the **Applications** tab.
2. Select the application to remove from the list.
3. Tap **Remove**. The application disappears from the list.
4. When you are finished, tap **OK**, then **Yes**. The printer restarts.

Unlocking the Taskbar

To unlock the taskbar:

1. Tap the lock icon at the bottom-left of the taskbar. The Input Panel keyboard appears on the display.
2. Enter the Administrator password and tap **OK**.

To re-lock the taskbar, tap the lock icon again, which has moved to the bottom-right side of the screen.

Using Asset Tracking

Asset tracking contains the manufacturer's product ID and serial number, and the owner's product ID and serial number. A password is required to edit this data. You can print an asset tracking label that contains the product IDs and serial numbers for your records.

Editing Owner Data

1. From the **Start Menu**, tap **Settings, Control Panel, Asset Tracking**.

Asset Tracking

Edit Import Export Print

PAJAR®
Moneroh® 6039™ See carton for patent notice.
Mansburg, OH 45342 Made in USA
DC Input: 7.5V ~~~ 4.0A
Prod. ID: [redacted]
Serial: [redacted]

Owner
Product ID
Serial Number

2. Tap **Edit**. Use the keypad to enter the password and press **Enter**. The default password is 123321.

The Owner Product ID field is highlighted.

3. Use the keypad or scan a bar code to enter a new Product ID and press **Enter**.

The Owner Serial Number field is highlighted.

4. Use the keypad or scan a bar code to enter a new Serial Number and press **Enter**.

Note: You can only edit owner data. The Paxar Product ID and Serial Number cannot be changed.

5. Tap **Export** to create a backup file of the new data on your computer or server, then tap **OK**.
6. Tap **Import** to retrieve a backup file from your computer or server, then tap **OK**. The retrieved data appears on the screen.



Printing an Asset Tracking Label

1. From the Asset Tracking screen, tap **Print**. A label prints with the Paxar and Owner Product IDs and Serial Numbers and their corresponding bar codes.

Note: You may want to keep this label in a safe place for future reference.

2. Tap **OK**, then **X** in the upper-right corner of the screen to exit the application.

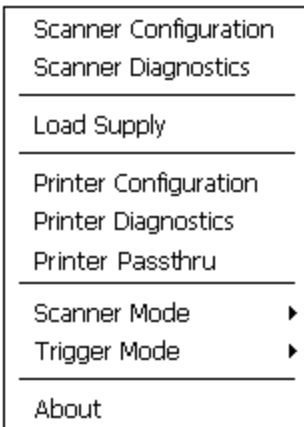


Asset Tracking Label

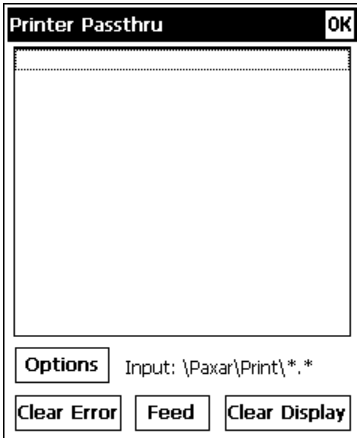
Using Printer Passthru

Printer passthru mode is an easy way to send an MPCLII packet (format, font, batch, graphic, etc.) directly to the printer. When designing a format, use printer passthru to send the format and batch to the printer to see how the format looks.

1. Tap the printer icon in the System Tray.

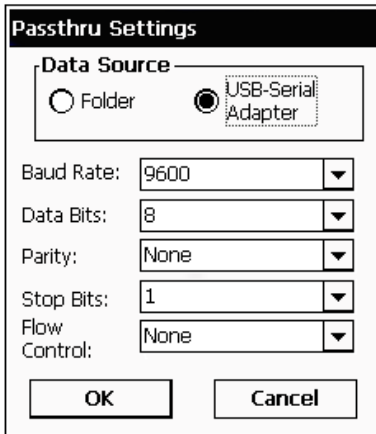


2. Tap **Printer Passthru**.



3. Tap **Options**.

4. Select **Data Source** as **Folder** or **USB-Serial Adapter**.



If you select Folder, the printer looks for packets in the *\\Paxar\Print* folder. Make sure packets are saved in the *\\Paxar\Print* folder.

If you select USB-Serial Adapter, you must set the communication settings and attach the USB cable via the USB-Serial adapter.

5. Tap **OK**.

6. Send a packet.

The text of the packet appears as well as any error messages or status for the packet.

Tap **Clear Error** to clear an error on the printer.

Tap **Feed** to feed a blank label.

Tap **Clear Display** to clear the Printer Passthru screen.

Note: If your battery power level is too low, printing is disabled. Refer to the *Operator's Handbook* for more information about the battery status.

7. When you are finished, tap **OK** to return to the desktop.

CONFIGURING WIRELESS SETTINGS

3

Use this chapter to configure the 802.11b and 802.11b/g wireless (radio) card settings.


About the 802.11b Wireless Card

The Symbol® Spectrum24® 802.11b wireless card operates at speeds of up to 11Mbps on any 802.11b wireless compatible network. You can use the printer in Ad-Hoc (peer-to-peer) or AP (access point or Infrastructure) wireless mode. Use the Windows® CE Mobile Companion utility available on your printer to configure the wireless card to communicate with your network.

Using the Mobile Companion

The Mobile Companion utility starts automatically when you turn on the printer and an icon appears in the System Tray.

Note: You may need to be in Admin Mode to access wireless features. See Chapter 2, “Administrative Tools” for more information.

Tap the Mobile Companion icon  in the System Tray. The main menu appears.

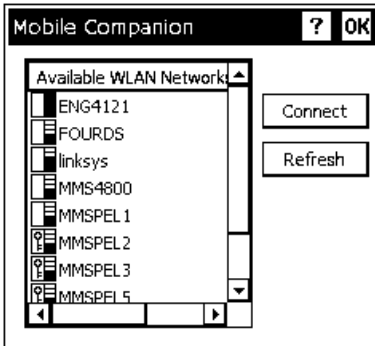
Menu Option	Description
Status	Displays the current connection’s signal strength, IP information, ping tests, and available access points.
WLAN Profiles	Lists existing profiles to connect or edit.
Find WLANs	Searches for available networks, signal strength, and any encryption.
Options	Enables or disables wireless modes (Ad-Hoc or AP) roaming, sounds, and set/change passwords.

Finding a Network

The printer searches for available networks and lists the SSIDs, signal strength, and encryption for each network. You can connect to an existing network profile if you have the required network security information.

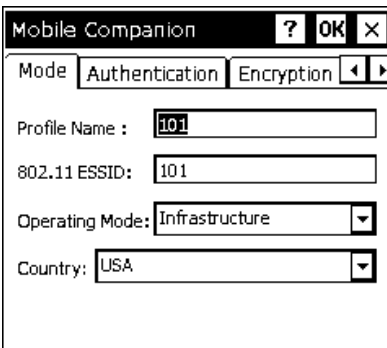
1. Tap , **Find WLANs**.

The printer searches for all networks in range and lists them alphabetically by SSID. This may take a few minutes.



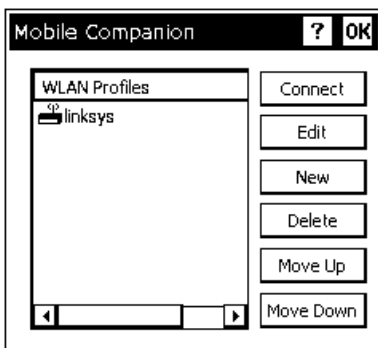
Note: A key indicates that encryption is enabled on the access point. You must have the network encryption settings to connect to a protected access point.

2. Select a network and tap **Connect**.
The Profile Configuration screen appears.



3. Verify the mode, authentication, encryption, and IP configuration settings.
4. Tap **OK** when you are finished.

The WLAN Profiles screen appears. When you connect to a network, Mobile Companion creates a profile for that connection. Your selected profile is shown with an access point icon.




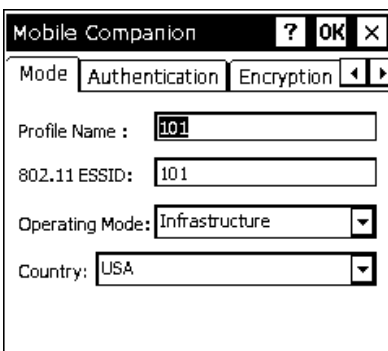
Note: The icon indicates a connection to this profile. To connect to a different profile, select the profile name and tap **Connect**.

5. Tap **OK** to return to the desktop.


Creating a Profile

You can create a new connection profile if the network you need does not appear in the list of available profiles.

1. Tap , **WLAN Profiles**.
2. Tap **New**. The Profile Configuration screen appears.




3. Enter a profile name and SSID to identify the printer on the network. The default name is 101.
4. Specify the wireless operating mode. The options are Ad-Hoc or Infrastructure.

5. Tap the **Authentication** tab and specify the authentication security settings. The options are None, Kerberos, EAP-TLS, or PEAP. These settings must match the network authentication settings or the printer cannot connect.
6. Tap the **Encryption** tab and specify the encryption settings. The options are Open System (no security), WEP, or TKIP (WPA). These settings must match the network encryption settings or the printer cannot connect.
7. Tap the **IP Config** tab and select the IP type. The options are DHCP or Static.
8. Tap the **Power** tab and adjust the radio transmission power, if necessary.
9. When you are finished, tap **OK**. You return to the desktop.
10. Tap , **WLAN Profiles**. The new profile is listed.

Setting a Password

You can set or change the Mobile Companion access password. The default is Disabled.

1. Tap , **Options**.
2. Tap **Change Password**.
3. To enable password protection, enter and confirm a new password. To change a current password, enter the current password, then enter and confirm a new password. To disable password protection, enter the current password but do not specify a new password.
4. Tap **OK**.
5. Tap **X** in the upper-right hand corner of the screen to exit the application.

Note: Make a note of the password if you change it. Setting a password restricts all access to wireless features.

About the 802.11b/g Wireless Card

The Motorola® LA-5127 802.11b/g wireless card operates at speeds of up to 11Mbps in 802.11b mode and 54Mbps in 802.11g mode on any wireless-compatible network. You can use the printer in Ad-Hoc (peer-to-peer) or Infrastructure (access point) wireless mode. Use the Fusion utility available on your printer to configure your wireless card to communicate with your network.

Using Fusion

The Fusion utility starts automatically when you turn on the printer and an icon appears in the System Tray.

Note: You may need to be in Admin Mode to access wireless features. See Chapter 2, “Administrative Tools” for more information.

Tap the Fusion icon  in the System Tray. The main menu appears.

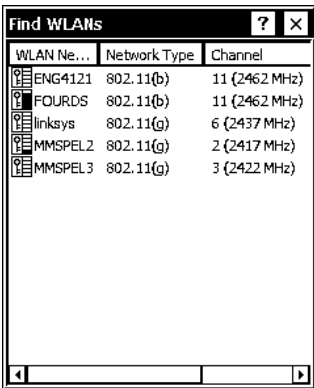
Menu Option	Description
Wireless Status	Displays the current connection's signal strength, IP address, and version information.
Wireless Diagnostics	Troubleshoots your connection using ping tests and trace routes.
Find WLANs	Searches for available networks, signal strength, and any encryption.
Manage Profiles	Lists existing profiles for connecting or editing.
Options	Enables or disables wireless mode, (Ad-Hoc or Infrastructure), roaming, and other system options, import/export settings, and set/change passwords.
Log On/Off	If you have a password-protected profile, select this option to enter your username and password.
Enable/Disable Radio	Turns the radio on and off.
Cancel Menu	Closes the menu.
Exit	Closes Fusion and removes the icon from the System Tray.

Finding a Network

The printer searches for available networks and lists the SSIDs, signal strength, and encryption. You can connect to an existing network profile if you have the required network security information.

1. Tap , **Find WLANs**.

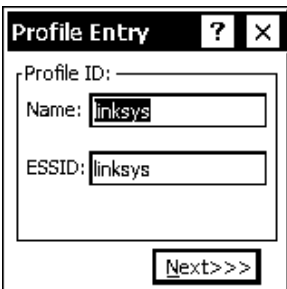
The printer searches for all networks in range and lists them alphabetically by SSID. This may take a few minutes.



WLAN Ne...	Network Type	Channel
ENG4121	802.11(b)	11 (2462 MHz)
FOURDS	802.11(b)	11 (2462 MHz)
linksys	802.11(g)	6 (2437 MHz)
MMSPPEL2	802.11(g)	2 (2417 MHz)
MMSPPEL3	802.11(g)	3 (2422 MHz)

Note: A key indicates that encryption is enabled on the access point. You must have the network encryption settings to connect to a protected access point.

2. Double-tap the network you need, then tap **Connect** in the pop-up menu. The Profile Entry screen appears.



Profile Entry [?] [X]

Profile ID: _____

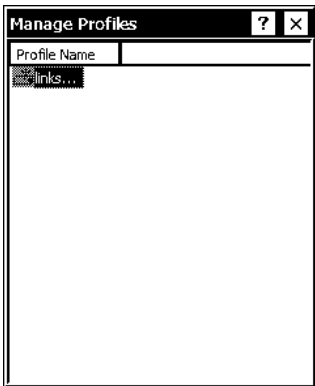
Name:

ESSID:

3. Tap **Next** to verify the mode, authentication, encryption, and IP configuration settings.

4. Tap **Finished**.

The Manage Profiles screen appears. When you connect to a network, Fusion creates a profile for that connection. Your selected profile is shown with an access point icon.




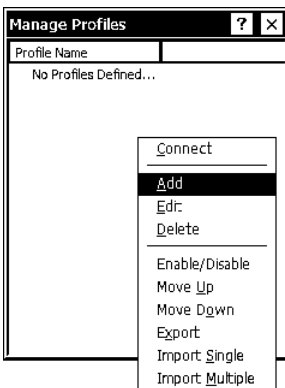
Note: The icon indicates a connection to this profile. To connect to a different profile, double-tap on the profile name, then tap **Connect** in the pop-up menu.

5. Tap **X** in the upper right-hand corner of the screen to return to the desktop.

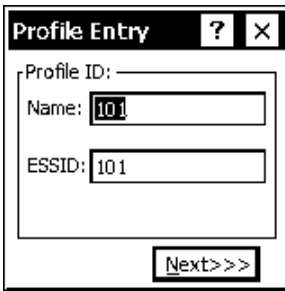
Creating a Profile

You can create a new connection profile if the network you need does not appear in the list of available profiles.

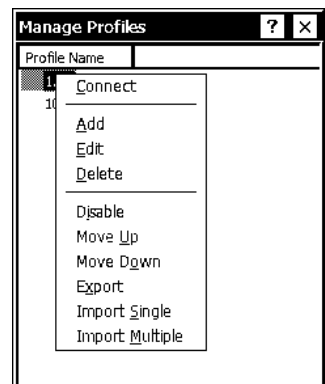
1. Tap , **Manage Profiles**.
2. Hold the stylus on an empty section of the screen until the pop-up menu appears.



3. Tap **Add**. The Profile Entry screen appears.



4. Enter a profile name and SSID to identify the printer on the network. The default name is 101. Tap **Next**.
5. Specify the wireless operating mode (Ad-Hoc or Infrastructure) and your country of operation, if necessary. Tap **Next**.
6. Specify the authentication security settings. The options are None, EAP-TLS, PEAP, LEAP, or TTLS. These settings must match the network authentication settings or the printer cannot connect. Tap **Next**.
7. Specify the encryption settings. The options are Open (no security), 40- or 128-bit WEP, TKIP (WPA), or AES. These settings must match the network encryption settings or the printer cannot connect. Tap **Next**.
8. Select the IP Address Entry method. The options are DHCP or Static. Tap **Next**.
9. Adjust the radio transmission power, if necessary. The options for Infrastructure mode are Automatic and Power Plus. When using Automatic, the printer uses the same transmit power level as the access point. When using Power Plus, the printer uses a transmit power one level higher than that of the access point. Tap **Next**.
10. Adjust the battery usage settings, if necessary.
11. Tap **Finished**. Your new profile appears on the Manage Profiles screen. If you are not automatically connected to your new profile, double-tap your profile's name, then tap **Connect** in the pop-up menu.



Setting a Password

You can set or change the Fusion access password. The default is no password.

Note: Make a note of the password if you change it. Setting a password restricts all access to wireless features.

1. Tap , **Options**.
2. Select **Change Password** from the drop-down menu.



The screenshot shows a dialog box titled "Options" with a question mark and close button in the title bar. Below the title bar is a dropdown menu currently set to "Change Password". Underneath is a section labeled "Settings" containing two text input fields: "New:" followed by a field with six asterisks, and "Confirm:" followed by a field with six asterisks. At the bottom of the dialog is a "Save" button.

3. To enable password protection, enter and confirm a new password.
To change a current password, enter the current password, then enter and confirm a new password.
To disable password protection, enter the current password but do not specify a new password.
4. Tap **Save**, then **OK**.
5. Tap **X** in the upper-right hand corner of the screen to return to the desktop.

USING PRINTER DIAGNOSTICS

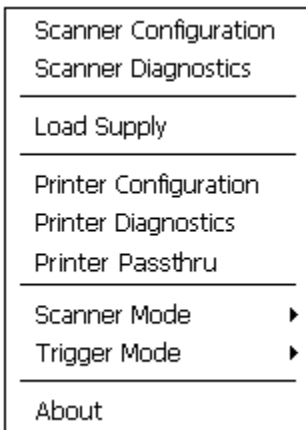
4

Use printer diagnostics to

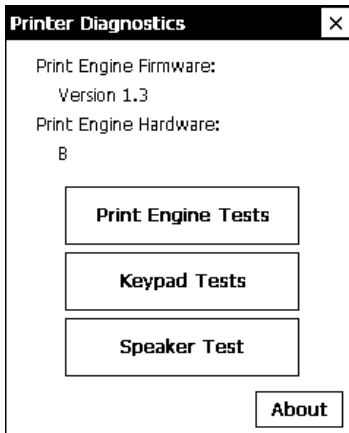
- ◆ check machine totals
- ◆ print diagnostic labels
- ◆ perform sensor tests
- ◆ perform a printhead dot resistance test
- ◆ check the keyboard's functionality.

Accessing Printer Diagnostics

1. Tap the printer icon in the System Tray.

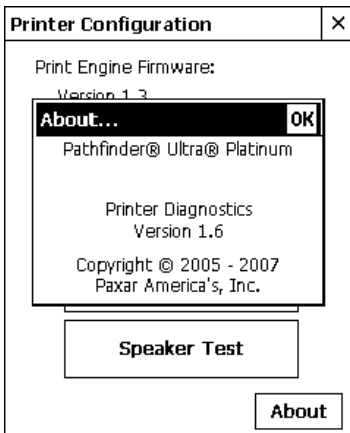


2. Tap **Printer Diagnostics**.



You can tap

- ◆ **About** to see the printer's software version and other information.

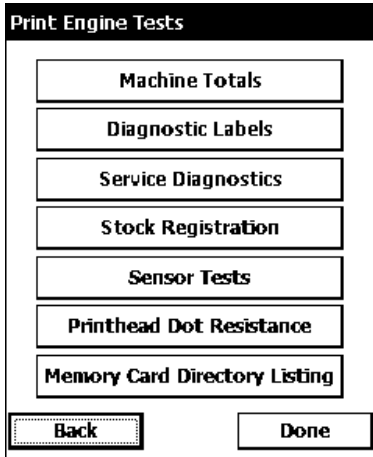


Tap **OK** to close the About box.

- ◆ **X** in the upper-right hand corner of the screen to quit Printer Diagnostics and return to the desktop.

Testing the Print Engine

1. Tap **Print Engine Tests** from the Printer Diagnostics screen.
2. Decide which of the following tests to perform:

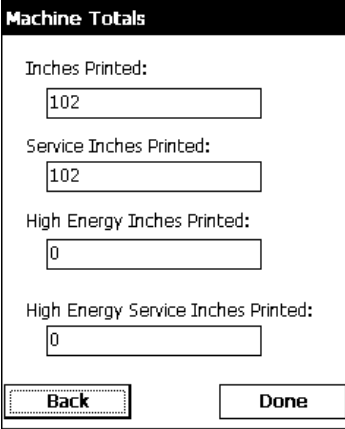


- ◆ For Machine Totals, see “Checking Machine Totals” for more information.
- ◆ For Diagnostic Labels, see “Printing Diagnostic Labels” for more information.
- ◆ For Stock Registration, see “Checking the Stock Registration” for more information.
- ◆ For Sensor Tests, see “Performing Sensor Tests,” for more information.
- ◆ For the Printhead Dot Resistance, see “Testing the Printhead,” for more information.
- ◆ For the Print Engine memory expansion directory, see “Memory Card Directory Listing,” for more information.

The Service Diagnostics Menu can only be accessed by a Paxar Representative because it requires a separate password.

Checking Machine Totals

1. Tap **Machine Totals** from the Print Engine Tests screen. You see the machine totals for inches printed, service inches printed, high (for synthetic supply) inches printed, and service high inches printed. The printer tracks how many inches of supply it prints.



The screenshot shows a window titled "Machine Totals" with four input fields and two buttons at the bottom. The fields contain the following values:

Category	Value
Inches Printed:	102
Service Inches Printed:	102
High Energy Inches Printed:	0
High Energy Service Inches Printed:	0

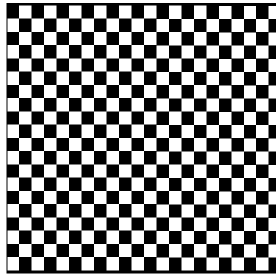
Buttons: **Back** (dotted border), **Done** (solid border)

2. Tap **Back** to return to the Print Engine Tests screen.
OR
Tap **Done** to return to the desktop.

Select:

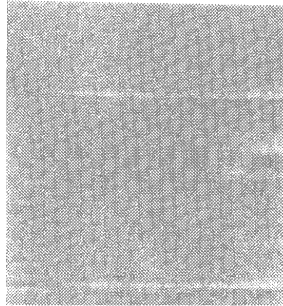
Checkerboard
Label

The following label prints:



Prints a label to verify that the printhead strobes are working. If your printed sample has fewer lines or no lines, keep the sample and call Service.

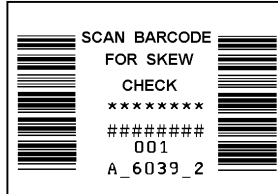
Gray Scale Label



The gray scale test checks the uniformity of the printing. The printed sample should be uniformly gray across the supply. If you see voids, especially on the edges, keep the sample and call Service.

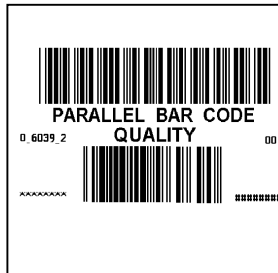
Label with voids

Serial Quality
Label



A label prints bar codes for you to scan to check the quality of serial bar codes.

Parallel Quality
Label



A label prints bar codes for you to scan to check the quality of parallel bar codes.

Select:
Contrast

The following label prints:

Use the arrow keys to change the print contrast. The higher the number, the darker the print; the lower the number, the lighter the print.

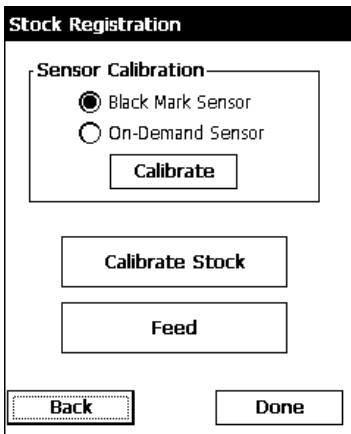
The print contrast controls the darkness of the printing on your supply. The range is -28 to +40 and the default is 0. You may need to increase or decrease the print contrast depending on your supply type.

The correct print contrast setting affects how well your bar codes scan and how long your printhead lasts.

3. Tap **Back** to return to the Print Engine Tests screen.
OR
Tap **Done** to return to the desktop.

Checking the Stock Registration

1. Load the supply and feed it through the label path as shown in the *Operator's Handbook* or *Quick Reference*.
2. Tap **Stock Registration** from the Print Engine Tests screen.

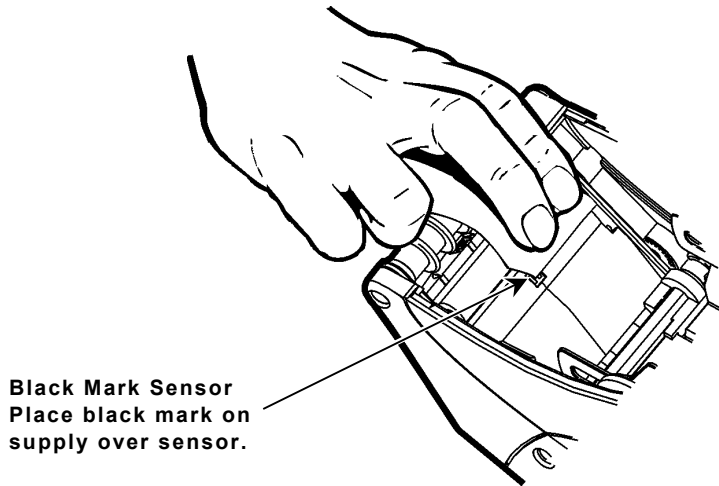


3. Select the sensor to calibrate (either Black Mark or On-Demand). The black mark sensor is used with black mark supplies (supplies with rectangular marks on the back side of the liner or on the supply). The on-demand sensor is for peeled supplies, either die-cut or black mark.
 4. Tap **Calibrate Sensor** to calibrate the selected sensor.
If you select the Black Mark sensor, the printer feeds supply until it detects a black mark to calibrate the sensor. When the calibration is successful, a label prints: "Stock Sensor Calibration Successful."
If you select the On-Demand sensor, the printer feeds one or two labels to calibrate the on-demand sensor.
As these tests are successfully performed, a window appears that tells you if the calibration was successful or unsuccessful. Tap **OK**.
If you calibrate the sensor, there is no need to calibrate the supply. However, if you tap **Calibrate Stock**, two or three labels are fed to calibrate the supply.
- Note:** If you want to feed a blank label, tap **Feed**.
5. Tap **Back** to return to the Print Engine Tests screen.
OR
Tap **Done** to return to the desktop.

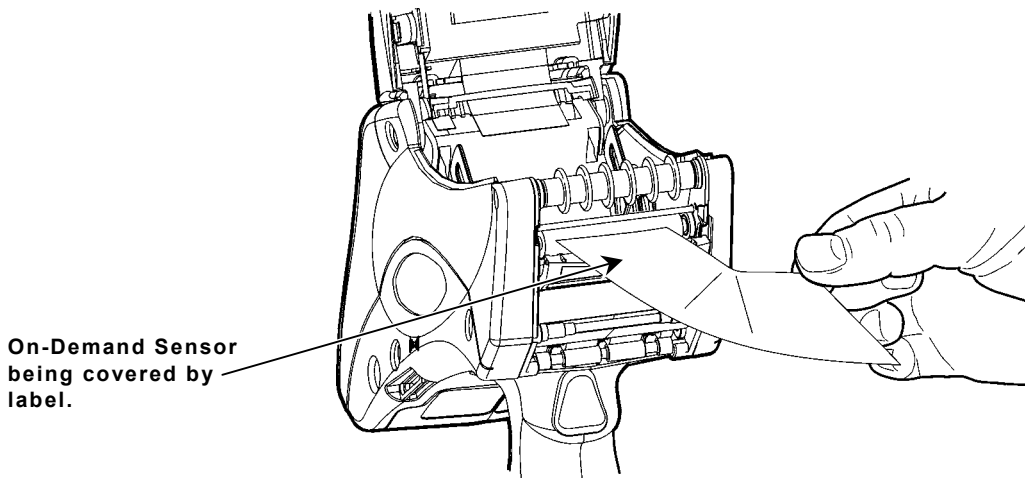
Testing the Sensors

1. Tap **Sensor Tests** from the Print Engine Tests screen.
2. You see the values for battery voltage, black mark sensor, on-demand sensor, and printhead temperature. The battery voltage range is between 7.0 and 8.4 volts. The printer will not print if the voltage is below 7.0.
3. Open the cover to test the sensors.
 - ◆ For the Black Mark sensor, hold a black mark against the sensor as shown. When you place the black mark on the sensor, the values change on the screen. If white is over the sensor, the values shown for the sensor are higher. The range is between 0 and 5.0.

Sensor Tests	
Battery Voltage:	<input type="text"/>
Black Mark Voltage:	<input type="text"/>
On-Demand Voltage:	<input type="text"/>
Print head Temp (°C)	<input type="text"/>
<input type="button" value="Stop"/>	
<input type="button" value="Back"/>	<input type="button" value="Done"/>



- ◆ For the On-Demand sensor, hold a white label against the sensor as shown. When you cover the sensor with a label, the values change on the screen. The valid range is between 3.0 and 5.0. If the sensor is covered by a black mark, the valid range is between 0 and 1.5.
- 4. The value listed for PH Temperature is the current temperature of the



printhead. The valid range is between 5 and 60 Celsius. The temperature of the printhead depends upon the number of labels printed and the operating environment. If the temperature is greater than 60, the printer will not print.

- 5. Tap **Stop** to stop the test and clear the values. Tap **Start** to run the test again.
- Note:** If the value is not within the ranges, make a note of the values given and call Service.
- 6. Tap **Back** to return to the Print Engine Tests screen.
OR
Tap **Done** to return to the desktop.

Testing the Printhead

1. Tap **Printhead Dot Resistance** from the Print Engine Tests screen to perform the printhead dot resistance test.

Print Head Dot Resistance

Bad Dot Count:

Print Head Dot Resistance Values:

Dot = 001 - Value: 325 (Good)
Dot = 002 - Value: 328 (Good)
Dot = 003 - Value: 329 (Good)
Dot = 004 - Value: 329 (Good)
Dot = 005 - Value: 329 (Good)
Dot = 006 - Value: 329 (Good)
Dot = 007 - Value: 329 (Good)
Dot = 008 - Value: 329 (Good)

Average Dot Resistance:

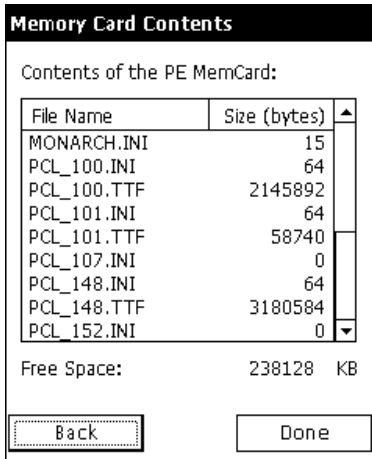
2. The printhead test checks for dot resistance. The dot resistance test checks each dot on the printhead. The valid range is between 245 and 455.

Note: If the values are not within range, make a note of the values given and call Service.

3. Tap **Back** to return to the Print Engine Tests screen, and again to return to the Printer Diagnostics screen
OR
Tap **Done** to return to the desktop.

Viewing the Print Engine Memory Expansion Directory

1. Tap **Memory Card Directory Listing** from the Print Engine Tests screen to view the Print Engine memory expansion directory. This button is grayed out if you do not have this option in your printer.
2. You see a list of what is currently saved to your Print Engine MicroSD card. For example:



Memory Card Contents

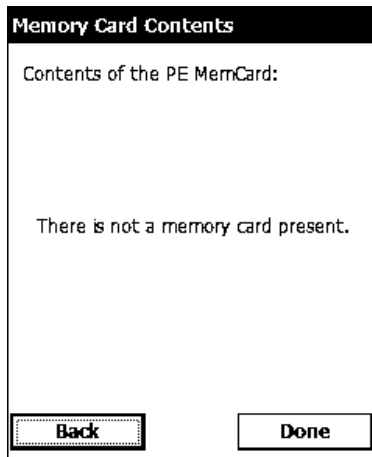
Contents of the PE MemCard:

File Name	Size (bytes)	
MONARCH.INI	15	
PCL_100.INI	64	
PCL_100.TTF	2145892	
PCL_101.INI	64	
PCL_101.TTF	58740	
PCL_107.INI	0	
PCL_148.INI	64	
PCL_148.TTF	3180584	
PCL_152.INI	0	

Free Space: 238128 KB

Back Done

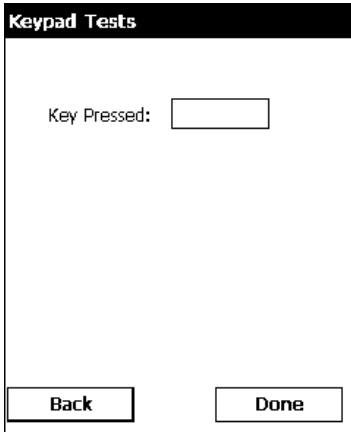
If the MicroSD card is not present, you see



3. Tap **Back** to return to the Print Engine Tests screen, and again to return to the Printer Diagnostics screen.
OR
Tap **Done** to return to the desktop.

Testing the Keypad

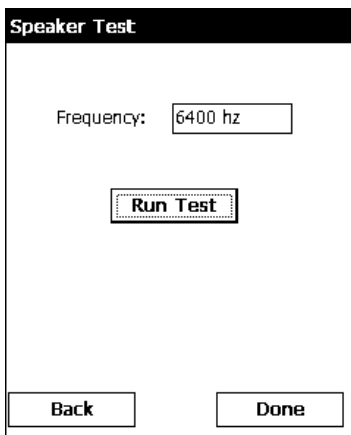
1. Tap **Keypad Tests** from the Printer Diagnostics screen.



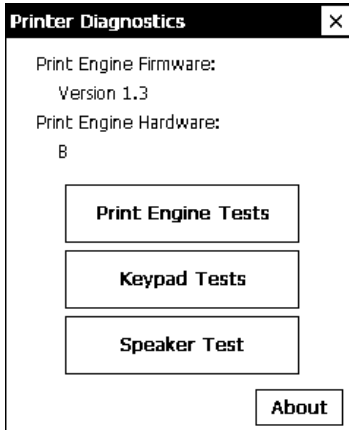
2. Press the key you want to test. The key pressed appears on the display. If you press Enter, the word "Enter" appears on the display.
3. Tap **Back** to return to the Printer Diagnostics screen.
OR
Tap **Done** to return to the desktop.

Testing the Speaker

1. Tap **Speaker Test** from the Printer Diagnostics screen to perform the speaker test.



2. Tap **Run Test**. While the test is performed, you hear a tone sounded at each frequency (200 Hz – 6400 Hz). The frequencies are displayed for each tone.
3. Tap **Back** to return to the Printer Diagnostics screen.
OR
Tap **Done** to return to the desktop.



CONFIGURING THE SCANNER

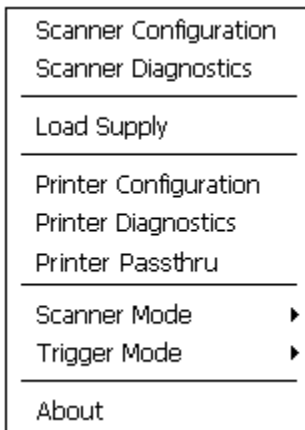
5

Use scanner configuration to

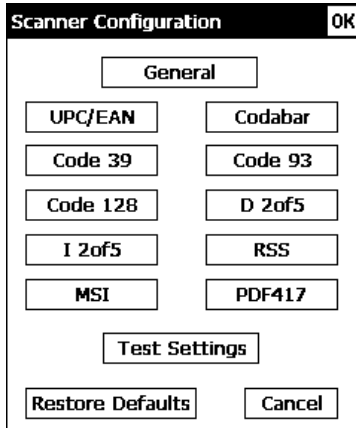
- ◆ set the scanner operating mode, trigger mode, and scanner timeout
- ◆ select the .wav file for successful and unsuccessful scans
- ◆ enable and disable each specific bar code.

Setting Scanner Options

1. Tap the printer icon in the System Tray.



2. Tap **Scanner Configuration**.

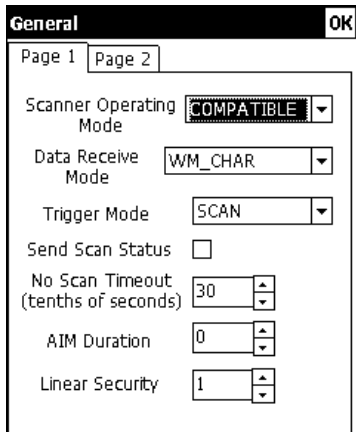


The image shows a dialog box titled "Scanner Configuration" with an "OK" button in the top right corner. Inside the dialog, there is a "General" section containing several buttons for selecting barcode types: UPC/EAN, Codabar, Code 39, Code 93, Code 128, D 2of5, I 2of5, RSS, MSI, and PDF417. Below these buttons is a "Test Settings" button. At the bottom of the dialog are two buttons: "Restore Defaults" and "Cancel".

Note: Tap **Restore to Defaults** to return all the scanner settings to the default values. Tap **Test Settings** to go to the Scanner Diagnostics screen.

The printer automatically resets any invalid settings or ranges to the default setting. A message appears specifying which setting or range was reset.

3. Tap **General**.



The image shows a dialog box titled "General" with an "OK" button in the top right corner. It has two tabs: "Page 1" and "Page 2". Under "Page 1", there are several settings: "Scanner Operating Mode" set to "COMPATIBLE", "Data Receive Mode" set to "WM_CHAR", "Trigger Mode" set to "SCAN", "Send Scan Status" (unchecked), "No Scan Timeout (tenths of seconds)" set to "30", "AIM Duration" set to "0", and "Linear Security" set to "1". Each of these settings is in a dropdown menu or a spinner control.

4. Set the **Scanner Operating Mode**: Momentary, Continuous, or Compatible. The default is compatible.

- Momentary** The scanner is on when the trigger is pressed and goes off when the trigger is released.
- Continuous** The scanner is always on. A good scan causes the scanner to reset and continue scanning.
- Compatible** The scanner operates in Monarch® 6037™ compatible mode, which means the scanner is on when the trigger is pressed and goes off after a successful scan or a predetermined timeout period.

Note: An unsuccessful scans turns off the scanner and activates the tone (.wav file) set using the Scanner Configuration menu. A “no scan” is interpreted as an unsuccessful scan.

5. Set the **Data Receive Mode:** WMCHAR or SMSCANCHAR. The default is WMCHAR.

WM_CHAR The application receives data by the keyboard buffer.

SM_SCANCHAR The application receives data by the scanner through a special message.

6. Set the **Operation of the Trigger Mode:** Scan, Drop, or Forward. The default is Forward.

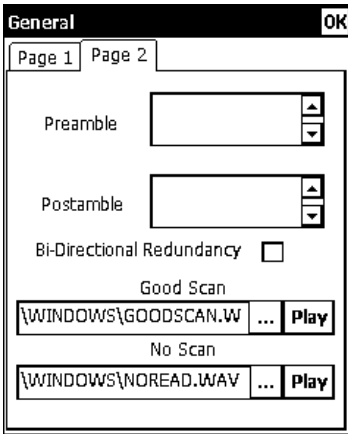
Scan Pressing the trigger turns on the scanner.

Drop The printer ignores the trigger press and does not turn on the scanner.

Forward The printer passes the trigger press to the application as an F11, which allows for more control of the application. You can code a custom application to perform a special function whenever it receives an F11.

7. Enable **Send Scan Status** to return the data after any scan. This data precedes the bar code and includes the length of data and bar code type. See Appendix A, “Scan Status Values,” for more information.
8. Set the **No Scan Timeout** in tenths of seconds, which is the amount of time the scanner beam is on before turning off when the trigger is pressed. The range is **5 – 99**. The default is 30.

9. Tap the Page 2 tab at the top of the screen to continue. You see additional options:



10. Set the **Preamble**, which specifies the characters to preface returned data from certain bar codes. The Preamble can be up to twenty user-defined characters.
11. Set the **Postamble**, which is the data to be sent after each scanned barcode. The Postamble can be up to twenty user-defined characters.
12. Set the **AIM Duration**, which is the duration of the aiming beam when the scanner is activated. The range is **0.0 - 9.9** seconds in .1-second increments (0 disables the AIM feature). The default is 0.
13. Set the **Linear Security**, which is how many times to scan the same barcode to determine a successful read. The range is 1 – 4. The default is 1.
14. Enable **Bi-Directional Redundancy**, which specifies that good scans must occur in both directions (forward and reverse) for the scan to be complete.

15. Use **Browse** to select the tone (.wav file) for a Good Scan. This tone is heard whenever a bar code is successfully scanned.
16. Tap **Play** to hear the tone.
17. Use **Browse** to select the tone (.wav file) for No Scan. This tone is heard whenever a bar code is unsuccessfully scanned.
18. Tap **Play** to hear the tone.
19. Tap OK to save all the settings and return to the Scanner Configuration screen.

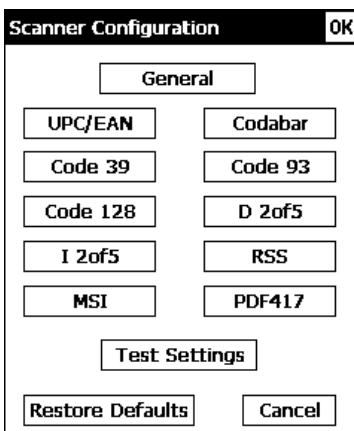
Enabling Specific Bar Codes

You must enable and disable each specific bar code type for scanning. Some bar codes require additional settings.

You can scan any of the following bar codes:

- ◆ UPC/EAN
- ◆ Code 39
- ◆ Code 128
- ◆ I 2of5
- ◆ MSI
- ◆ Codabar
- ◆ Code 93
- ◆ D 2of5
- ◆ RSS

Note: Some bar codes can be printed, but not scanned. See “Printable Bar Codes vs. Scannable Bar Codes” for more information.



Configuring UPC/EAN Bar Codes

1. To configure UPC/EAN settings, tap **UPC/EAN** from the Scanner Configuration screen.

2. Enable each bar code you need to scan.

UPCA Allows the scanner to scan UPCA, UPCA+2, and UPCA+5 bar codes.

UPCE Allows the scanner to scan UPCE bar codes.

UPCE1 Allows the scanner to scan UPCE1 bar codes.

EAN8 Allows the scanner to scan EAN8 bar codes.

EAN13 Allows the scanner to scan EAN13 bar codes.

3. For each bar code, decide if you want to tell the scanner to return the check digit with the data when the bar code is scanned. Check the **Transmit CD** box as necessary.

4. For each bar code, set the **Preamble**, which specifies the characters that preface the returned data from a UPCA bar code. The choices are

- ◆ **None** (No Data)
- ◆ **SYCHAR** (System Character)
- ◆ **SYSCOUNT** (Country Code and System Character).

Note: The USA country code is 0.

The screenshot shows the 'UPC/EAN' configuration window with an 'OK' button in the top right. The window is divided into two pages, with 'Page 2' selected. It features three columns: 'Enable', 'Transmit CD', and 'Preamble'. The 'Preamble' column contains dropdown menus for each bar code type.

Enable	Transmit CD	Preamble
<input checked="" type="checkbox"/> UPCA	<input checked="" type="checkbox"/>	SYCHAR
<input checked="" type="checkbox"/> UPCE	<input checked="" type="checkbox"/>	SYCHAR
<input type="checkbox"/> UPCE1	<input checked="" type="checkbox"/>	SYCHAR
<input checked="" type="checkbox"/> EAN8		
<input checked="" type="checkbox"/> EAN13		

- Tap the Page 2 tap at the top of the screen to continue.
- Enable each bar code you need to scan.

Coupon Code Allows the scanner to scan UPCA, UPCA+2, UPCA+5, and UPCA/EAN-128 bar codes.

Note: Set Supplemental to **Auto** to use this option.

UPCE to UPCA Tells the scanner to convert UPCE bar codes to a UPCA format before returning the data.

Note: After the conversion, your UPCA selections affect the data.

EAN Zero Extend Tells the scanner to add 5 leading zeros to EAN8 bar codes to convert them into EAN13 bar codes.

Bookland Allows the scanner to scan Bookland EAN bar codes.

EAN8 to EAN13 Tells the scanner to label the bar code as EAN8 or EAN13 when EAN Zero Extend is enabled.

UPCE1 to UPCA Tells the scanner to convert UPCE1 bar codes to a UPCA format before returning the data.

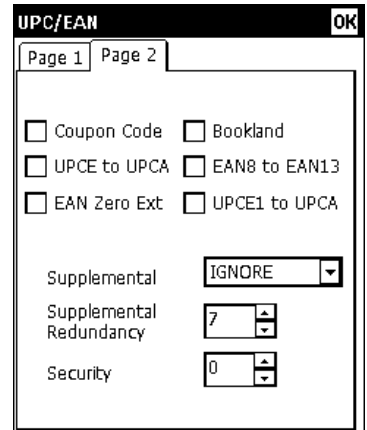
Note: After the conversion, your UPCA selections affect the data.

- Set the Supplemental Mode for UPC/EAN bar codes, which specifies how to treat UPC and EAN bar codes with supplemental characters (UPCA+2, for example). The choices are Required, Ignore, or Auto. The default is Ignore.

Required The scanner scans bar codes with supplemental characters only. For example, it scans a UPCA+2 bar code, but not UPCA.

Ignore The scanner ignores supplemental characters. For example, it scans a UPCA+2 bar code as a UPCA.

Auto Uses scanning information as specified in Scan UPC/EAN Supplemental Redundancy.



8. Set the **Supplemental Redundancy**, which sets the number of times a symbol without supplemental information is decoded. The range is 2 – 20. The default is 7.
9. Set the **Security**, which is how many times to scan the same barcode to determine a successful read. The range is 1 – 4. The default is 1. Before setting this security level, you must decide the print quality of the bar codes you are scanning. The better the quality of the bar code, the lower the security level needed.
 - 1 Choose 1 if most of your scans are successful.
 - 2 Choose 2 when your unsuccessful scans are related to characters 1, 2, 7, and 8.
 - 3 Choose 3 when your unsuccessful scans are not limited to characters 1, 2, 7, and 8.
 - 4 Choose 4 if unsuccessful scans still occur at level 2.
10. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

Configuring Code 39 Bar Codes

1. To configure Code 39 settings, tap **Code 39** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

Code 39	Allows the scanner to scan Code 39 bar codes.
Transmit CD	Tells the scanner to return the check digit with the data when a Code 39 bar code is scanned.
Code32 Prefix	Allows the scanner to scan Code 32 Prefix bar codes.
Convert to Code32	Tells the scanner to convert Code 39 bar codes to Code 32 bar codes.
Full ASCII Conversion	Allows the scanner to interpret data in a Code 39 bar code as an ASCII representation. The scanner does not autodiscriminate between Code 39 and Code 39 Full ASCII. Note: Do not enable this option and Trioptic Code 39 at the same time.
Trioptic 39	Allows the scanner to scan Trioptic Code 39 bar codes. The length is always 6. Note: Do not enable this bar code and Code 39 Full ASCII at the same time.
Verify CD	Tells the scanner to check the integrity of all Code 39 bar codes that it scans. Note: This option only works on Code 39 bar codes that include a modulo 43 check digit.

Code 39 OK

Code 39 Full ASCII

Transmit CD Trioptic 39

CODE32 Prefix Verify CD

Convert to CODE32

Lengths

Variable 1 Fixed 2 Fixed

Min: 2 Max: 55

Lengths
Sets the length(s) for Code 39 bar codes.

Variable, specifies that Code 39 bar codes can be any length.

Note: Lengths include check digits.

1 Fixed, specifies a single length for valid Code 39 bar codes. The range for Length 1 is 2 – 99. The default is 2.

2 Fixed, specifies two lengths for valid Code 39 bar codes. The range for Length 2 is 2 – 99. The default is 55.

If you have enabled Code 39 Full ASCII, choose **Variable**.

Note: Specifying a range of lengths increases the likelihood of unsuccessful scans.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

Configuring Code 128 Bar Codes

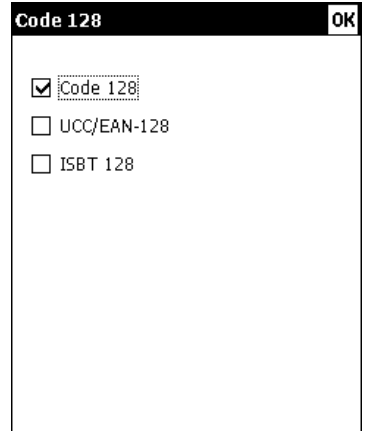
1. To configure Code 128 settings, tap **Code 128** from the Scanner Configuration screen.

2. Enable each bar code you need to scan.

Code 128 Allows the scanner to scan Code 128 bar codes.

**UCC/
EAN-128** Allows the scanner to scan UCC/EAN-128 bar codes.

ISBT 128 Allows the scanner to scan ISBT 128 bar codes. Any length bar code is valid.



3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

Configuring I 2of5 Bar Codes

1. To configure I 2of5 settings, tap **I 2of5** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

I 2of5 Allows the scanner to scan I 2of5 bar codes.

Transmit CD Tells the scanner to return the check digit with the data when an I 2of5 bar code is scanned.

Convert to EAN13 Tells the scanner to convert 14-character I 2of5 bar codes into an EAN13 bar code.

I 2 of 5 OK

I 2 of 5 Verify CD

Transmit CD

Convert to EAN13

Lengths

Variable Fixed 1 Fixed 2

1 Fixed 14 0

2 Fixed

For the conversion to work, the following must occur:

- ◆ I 2of5 bar codes must be enabled.
- ◆ 14 must be a valid length.
- ◆ The data must have a leading zero.
- ◆ The data must include an EAN13 check digit.

Verify CD Tells the scanner to check the integrity of a scanned I 2of5 bar code to ensure it complies with either USS or OPCC standards.

Lengths *Variable*, specifies that I 2of5 bar codes can be any length. Sets the length(s) for I 2 of 5 bar codes. **Note:** Specifying a range of lengths increases the likelihood of unsuccessful scans.

1 Fixed, specifies a single length for valid I 2of5 bar codes. The range for Length 1 is 2 – 99. The default is 14.

2 Fixed, specifies two lengths for valid I 2of5 bar codes. The range for Length 2 is 2 – 99. The default is 0.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

Configuring MSI Bar Codes

1. To configure MSI settings, tap **MSI** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

MSI Allows the scanner to scan MSI bar codes.

Transmit CD Tells the scanner to return the check digit with the data when an MSI bar code is scanned.

Mod 10/11 CD Scheme Tells which algorithm to use to ensure the integrity of a two-check digit MSI bar code.

Use 2 CDs Tells the number of check digits that MSI bar codes should have.

Note: Check digits are not always returned with the data. If you choose two check digits, you must choose a check digit algorithm.

Lengths *Variable*, specifies that MSI bar codes can be any length.

Sets the length(s) for MSI bar codes. **Note:** Specifying a range of lengths increases the likelihood of unsuccessful scans.

1 Fixed, specifies a single length for valid MSI bar codes. The range for Length 1 is 1 – 99. The default is 6.

2 Fixed, specifies two lengths for valid MSI bar codes. The range for Length 2 is 1 – 99. The default is 55.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

The screenshot shows the MSI configuration window with the following elements:

- Header: MSI (left) and OK (right)
- Checkboxes: MSI, Use 2 CDs, Transmit CD, Mod 10/11 CD Scheme
- Section: Lengths
- Radio buttons: Variable, 1 Fixed, 2 Fixed
- Spinners: Min (6), Max (55)

Configuring Codabar Bar Codes

1. To configure Codabar settings, tap **Codabar** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

Codabar Allows the scanner to scan Codabar bar codes.

NOTISEdit Tells the scanner to strip the start and stop characters from scanned Codabar bar codes.

CLSIEdit Tells the scanner to strip the start and stop characters from 14-character Codabar bar codes and insert spaces after the first, fifth, and tenth characters.

Note: The 14-character length does not include start and stop characters.

Lengths Sets the length(s) for Codabar bar codes.

Variable, specifies that Codabar bar codes can be any length.

Note: Specifying a range of lengths increases the likelihood of unsuccessful scans.

1 Fixed, specifies a single length for valid Codabar bar codes. The range for Length 1 is 1 – 99. The default is 5.

2 Fixed, specifies two lengths for valid Codabar bar codes. The range for Length 2 is 1 – 99. The default is 55.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

The screenshot shows a dialog box titled "Codabar" with an "OK" button in the top right corner. Inside the dialog, there are three checkboxes: "Codabar" (checked), "CLSIEdit" (unchecked), and "NOTISEdit" (unchecked). Below these is a section titled "Lengths" containing three radio button options: "Variable" (selected), "1 Fixed" (unchecked), and "2 Fixed" (unchecked). To the right of the "1 Fixed" option is a numeric spinner set to "5", and to the right of the "2 Fixed" option is a numeric spinner set to "55".

Configuring Code 93 Bar Codes

1. To configure Code 93 settings, tap **Code 93** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

Code 93 Allows the scanner to scan Code 93 bar codes.

Lengths Sets the length(s) for Code 93 bar codes. *Variable*, specifies that Code 93 bar codes can be any length.

Note: Specifying a range of lengths increases the likelihood of unsuccessful scans.

Code 93 OK

Code 93

Lengths

Variable Min Max

1 Fixed 4 55

2 Fixed

1 Fixed, specifies a single length for valid Code 93 bar codes. The range for Length 1 is 2 – 99. The default is 4.

2 Fixed, specifies two lengths for valid Code 93 bar codes. The range for Length 2 is 2 – 99. The default is 55.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.

Configuring D 2of5 Bar Codes

1. To configure D 2of5 settings, tap **D 2of5** from the Scanner Configuration screen.
2. Enable each bar code you need to scan.

D 2of5 Allows the scanner to scan D 2of5 bar codes.

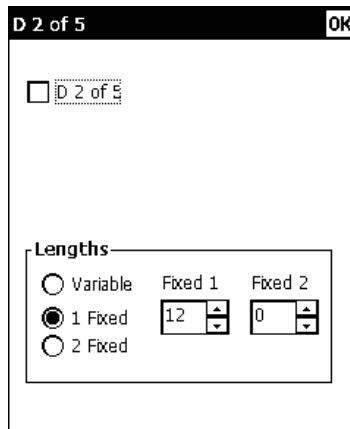
Lengths Sets the length(s) for D 2of5 bar codes.

Note: Specifying a range of lengths increases the likelihood of unsuccessful scans.

1 Fixed, Specifies a single length for valid D 2of5 bar codes. The range for Length 1 is 2 – 99. The default is 12.

2 Fixed, Specifies two lengths for valid D 2of5 bar codes. The range for Length 2 is 2 – 99. The default is 0.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.



Configuring RSS Bar Codes

1. To configure RSS settings, tap **RSS** from the Scanner Configuration screen.

2. Enable each bar code you need to scan.

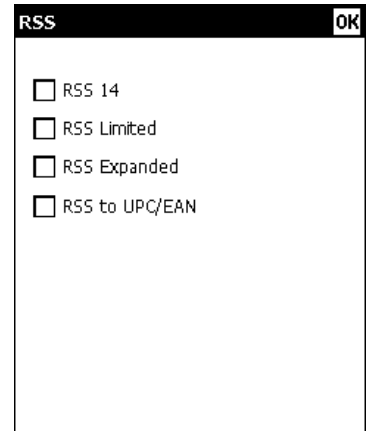
RSS 14 Allows the scanner to scan RSS 14 bar codes.

RSS Limited Allows the scanner to scan RSS Limited bar codes.

RSS Expanded Allows the scanner to scan RSS Expanded bar codes.

RSS to UPC/EAN Tells the scanner to convert RSS bar codes into an UPC/EAN bar code.

3. Tap **OK** to save all the settings and return to the Scanner Configuration screen.



Printable Bar Codes vs. Scannable Bar Codes

The printer scans the following bar codes:

- ◆ Codabar
- ◆ Code 128
- ◆ Code 39 (MOD 43 check digit)
- ◆ Code 39 (no check digit)
- ◆ Code 93
- ◆ EAN 13
- ◆ EAN 13 & Price CD
- ◆ EAN 13 +2
- ◆ EAN 13 +5
- ◆ EAN 8
- ◆ EAN 8 +2
- ◆ EAN 8 +5
- ◆ I2 of 5 with Barrier Bar
- ◆ I2of5
- ◆ MSI
- ◆ UPCA
- ◆ UPCA & Price CD
- ◆ UPCA +2
- ◆ UPCA +5
- ◆ UPCE
- ◆ UPCE +2
- ◆ UPCE +5

The printer prints the following bar codes:

- ◆ Codabar
- ◆ Code 128
- ◆ Code 39 (MOD 43 check digit)
- ◆ Code 39 (no check digit)
- ◆ Code 93
- ◆ EAN 13
- ◆ EAN 13 & Price CD
- ◆ EAN 13 +2
- ◆ EAN 13 +5
- ◆ EAN 8
- ◆ EAN 8 +2
- ◆ EAN 8 +5
- ◆ I2of5
- ◆ I2of5 with Barrier Bar
- ◆ MaxiCode
- ◆ MSI
- ◆ PDF417
- ◆ Postnet
- ◆ UPCA
- ◆ UPCA +5
- ◆ UPCA & Price CD
- ◆ UPCA +2
- ◆ UPCE +5
- ◆ UPCE
- ◆ UPCE +2

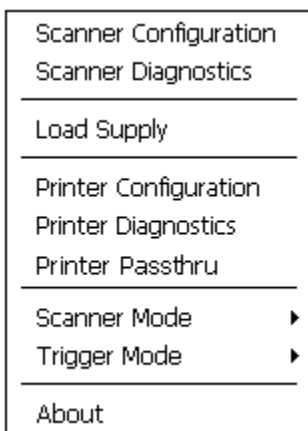
USING SCANNER DIAGNOSTICS

Use scanner diagnostics to

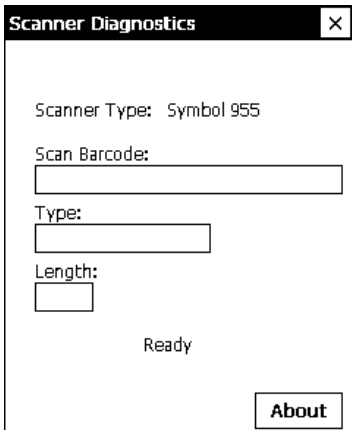
- ◆ check the data in a bar code
- ◆ view a bar code's type and length.

Performing Scanner Diagnostics

1. Tap the printer icon in the System Tray.

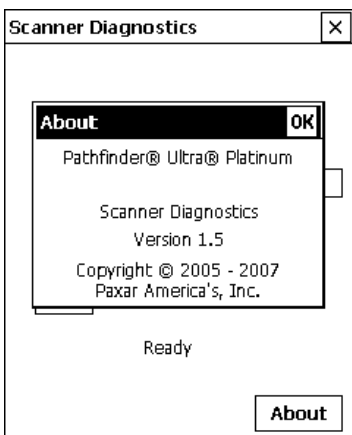


2. Tap **Scanner Diagnostics**.



3. Scan a bar code. You see the bar code's data and length.

4. Tap **About** to see additional scanner information.



5. Tap **OK** to close the About box.

6. Tap **X** in the upper-right hand corner of the screen to return to the desktop.

Setting the Scanner Mode

To set the scanner mode without using the Scanner Configuration menu:

1. Tap the printer icon in the System Tray.
2. Set the **Scanner Mode**: Momentary, Continuous, or Compatible.

Momentary	The scanner is on as long as the trigger is pressed and goes off when the trigger is released.
Continuous	The scanner is always on. A good scan causes the scanner to reset and continue scanning.
Compatible	The scanner operates in Monarch® 6037™ compatible mode. The scanner is on as long as the trigger is pressed and goes off after a successful scan or a predetermined timeout period.

Note: A bad scan turns off the scanner and activates the tone (.wav file) set in Scanner Configuration.

Setting the Trigger Mode

To set the trigger mode without using Scanner Configuration:

1. Tap the printer icon in the System Tray.
2. Set the **Trigger Mode**: Scan, Drop, or Forward. The default is Forward.

Scan	Pressing the trigger activates the scanner.
Drop	The printer ignores the trigger press and does NOT activate the scanner.
Forward	The printer passes the trigger press to the application, which simulates pressing F11.

SCAN STATUS VALUES

A

If you have enabled **Send Scan Status**, use the following table to interpret the data returned from every scan. This data precedes the bar code and includes the length of data and bar code type. Refer to the *Programmer's Manual* for more information.

Value	Bar Code Type
0	No Scan
1	Code 39
2	Codabar
3	Code 128
4	Dk 2of5
5	IATA 2of5
6	I 2of5
7	Code 93
8	UPC A
9	UPC E
10	EAN 8
11	EAN 13
14	MSI Plessey
15	EAN 128
16	UPC E1
21	Trioptic Code 39
22	Bookland EAN
23	Coupon Code

Value	Bar Code Type
48	RSS 14
49	RSS Limited
50	RSS Expanded
72	UPC A with 2 Supplements
73	UPC E with 2 Supplements
74	EAN 8 with 2 Supplements
75	EAN 13 with 2 Supplements
80	UPC E1 with 2 Supplements
136	UPC A with 5 Supplements
137	UPC E with 5 Supplements
138	EAN 8 with 5 Supplements
139	EAN 13 with 5 Supplements
144	UPC E1 with 5 Supplements

Visit **www.monarch.com** for sales, service,
supplies, information, and telephone numbers
for our locations throughout the world.

TOLL FREE:

1-800-543-6650 (In the U.S.A.)

1-800-363-7525 (In Canada)